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Claims

What is claimed is:

1   1.   In a computer controlled user interactive display
2   system, a display interface implementation for enabling
3   an interactive user to select specific items on a display
4   screen with crowded selectable items comprising:
5   user controlled means for moving an on-screen
6   pointer to approach said selectable items;
7   means for setting a predetermined minimum clearance
8   factor required for user selection of an item by said
9   pointer;
10   means for determining whether a selectable item
11   being approached by said pointer has said minimum
12   clearance factor; and
13   means responsive to a determination that said
14   approached item does not have said minimum clearance
15   factor for reducing the size of said pointer.

1   2.   The display system of claim 1 wherein said items are
2   icons.

1   3.   The display system of claim 2 wherein said reduced
2   size pointer has a reduced minimum clearance factor.

1   4. The display system of claim 3 wherein said minimum

2   clearance factor is defined by:

3   Minimum Clearance = d + s wherein:

4   d is the widest visible dimension of the approached

5   icon, and

6   s is the space between the approached icon and the

7   closest adjacent icon in a continuation of the d

8   dimension line.

1   5. In a computer controlled user interactive display
2   system, a display interface implementation for enabling
3   an interactive user to select specific icons on a display
4   screen with crowded selectable icons comprising:
5   user controlled means for moving an on-screen
6   pointer to approach said selectable icons;
7   means for setting a predetermined minimum clearance
8   distance required for user selection of an icon by said
9   pointer;
10   means for determining whether a selectable icon
11   being approached by said pointer is within said minimum
12   clearance distance from said pointer;
13   means for determining whether said approached icon
14   has said minimum clearance distance from its adjacent
15   icons; and
16   means responsive to a determination that said
17   approached icon does not have said minimum clearance
18   distance from adjacent icons for automatically reducing
19   the size of said pointer.

1   6. The display system of claim 5 wherein said reduced
2   size pointer has a reduced minimum clearance distance
3   whereby said approached icon does have said minimum
4   clearance distance from adjacent icons.

1　7.　A method for enabling an interactive user to select
2　specific items on a display screen with crowded
3　selectable items in computer controlled user interactive
4　display systems comprising:
5　　　moving an on-screen pointer to approach said
6　selectable items;
7　　　setting a predetermined minimum clearance factor
8　required for user selection of an item by said pointer;
9　　　determining whether a selectable item being
10　approached by said pointer has said minimum clearance
11　factor; and
12　　　reducing the size of said pointer responsive to a
13　determination that said approached item does not have
14　said minimum clearance factor.

1　8.　The method of claim 7 wherein said items are icons.

1　9.　The method of claim 8 wherein said reduced size
2　pointer has a reduced minimum clearance factor.

1　10.　The method of claim 9 wherein said minimum clearance
2　factor is defined by:
3　　　　Minimum Clearance = d + s wherein:
4　　　d is the widest visible dimension of the approached
5　icon, and
6　　　s is the space between the approached icon and the
7　closest adjacent icon in a continuation of the d
8　dimension line.

1 11. A method enabling an interactive user to select
2 specific selectable icons on a display screen with
3 crowded selectable icons in computer controlled user
4 interactive display systems comprising:
5   moving an on-screen pointer to approach said
6 selectable icons;
7   setting a predetermined minimum clearance distance
8 required for user selection of an icon by said pointer;
9   determining whether a selectable icon being
10 approached by said pointer is within said minimum
11 clearance distance from said pointer;
12   determining whether said approached icon has said
13 minimum clearance distance from its adjacent icons; and
14   automatically reducing the size of said pointer
15 responsive to a determination that said approached icon
16 does not have said minimum clearance distance from
17 adjacent icons.

1 12. The method of claim 5 wherein said reduced size
2 pointer has a reduced minimum clearance distance whereby
3 said approached icon does have said minimum clearance
4 distance from adjacent icons.

1 13. A computer program having program code included on a
2 computer readable medium for enabling an interactive user
3 to select specific items on a display screen with crowded
4 selectable items in a computer controlled user
5 interactive display system comprising:
6   user controlled means for moving an on-screen
7 pointer to approach said selectable items;
8   means for setting a predetermined minimum clearance
9 factor required for user selection of an item by said
10 pointer;
11   means for determining whether a selectable item
12 being approached by said pointer has said minimum
13 clearance factor; and
14   means responsive to a determination that said
15 approached item does not have said minimum clearance
16 factor for reducing the size of said pointer.

1 14. The computer program of claim 13 wherein said items
2 are icons.

1 15. The computer program of claim 14 wherein said
2 reduced size pointer has a reduced minimum clearance
3 factor.

1 16. The computer program of claim 15 wherein said
2 minimum clearance factor is defined by:
3   Minimum Clearance = d + s wherein:
4   d is the widest visible dimension of the approached
5 icon, and
6   s is the space between the approached icon and the
7 closest adjacent icon in a continuation of the d
8 dimension line.

1 17. A computer program having program code included on
2 a computer readable medium for enabling an interactive
3 user to select specific icons on a display screen with
4 crowded selectable icons in a computer controlled user
5 interactive display systems comprising:
6   user controlled means for moving an on-screen
7 pointer to approach said selectable icons;
8   means for setting a predetermined minimum clearance
9 distance required for user selection of an icon by said
10 pointer;
11   means for determining whether a selectable icon
12 being approached by said pointer is within said minimum
13 clearance distance from said pointer;
14   means for determining whether said approached icon
15 has said minimum clearance distance from its adjacent
16 icons; and
17   means responsive to a determination that said
18 approached icon does not have said minimum clearance
19 distance from adjacent icons for automatically reducing
20 the size of said pointer.

1 18. The computer program of claim 17 wherein said
2 reduced size pointer has a reduced minimum clearance
3 distance whereby said approached icon does have said
4 minimum clearance distance from adjacent icons.

1   19. In a computer controlled user interactive display
2   system, a display interface implementation for directing
3   a user's attention to specific selectable items on a
4   display screen with crowded selectable items comprising;
5   user controlled means for moving an on-screen
6   pointer to approach a cluster of said selectable items;
7   and
8   means for determining whether the items in said
9   cluster have sufficient clearance for said pointer to
10 select separate items in said cluster; and
11   means responsive to a determination of insufficient
12 clearance for sequentially enlarging the dimensions of
13 each of the items in said cluster relative to the pointer
14 size whereby there is sufficient clearance.

1   20. The computer controlled user interactive display
2   system of claim 19 wherein each item is activated for
3   selection when said dimensions are enlarged.

1   21. A method for directing a user's attention to

2   specific selectable items on a display screen with

3   crowded selectable items in computer controlled user

4   interactive display systems comprising:

5   moving an on-screen pointer to approach a cluster of

6   said selectable items;

7   determining whether the items in said cluster have

8   sufficient clearance for said pointer to select separate

9   items in said cluster; and

10   responsive to a determination of insufficient

11 clearance, sequentially enlarging the dimensions of each

12 of the items in said cluster relative to the pointer size

13 whereby there is sufficient clearance.

1   22. The method of claim 21 wherein each item is

2   activated for selection when said dimensions are

3   enlarged.

1 23. A computer program having program code included on a
2 computer readable medium for directing a user's attention
3 to specific selectable items on a display screen with
4 crowded selectable items in computer controlled user
5 interactive display systems comprising:
6   user controlled means for moving an on-screen
7 pointer to approach a cluster of said selectable items;
8   means for determining whether the items in said
9 cluster have sufficient clearance for said pointer to
10 select separate items in said cluster; and
11   means responsive to a determination of insufficient
12 clearance for sequentially enlarging the dimensions of
13 each of the items in said cluster relative to the pointer
14 size whereby there is sufficient clearance.

1 24. The computer controlled user interactive display
2 system of claim 23 wherein each item is activated for
3 selection when said dimensions are enlarged.